Difficult cases of canine pruritus

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DIFFICULT CASES OF CANINE PRURITUS

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The great majority of dogs with pruritus have infectious or allergic skin diseases. That is the reason why any case of pruritus should be first worked up for parasites, especially fleas, sarcoptes and cheyletiella, bacteria, fungi and hypersensitivity dermatitis such as atopic dermatitis, flea bite hypersensitivity or food allergy.

One should however keep in mind that some other conditions may induce itch in dogs. These conditions are often auto-immune, immune-mediated or associated with tumours.

We will present three relatively common skin conditions of these groups: pemphigus folicaceus, sebaceous adenitis and cutaneous T cell epitheliotropic lymphoma.

Pemphigus foliaceus (PF) is the most frequent auto-immune skin disease in dogs and cats. On a pathogenetic point of view, PF is a desmosome proteolysis driven by autoantibodies targeting desmosomal proteins desmogleins. The main consequence of this proteolysis is the presence of free keratinocytes at various level of the epidermis, followed by a neutrophilic reaction. That is the reason why PF presents clinically as a pustular dermatitis. These pustules occur in some typical areas of the body such as the ear pinnae, the bridge of the nose, the face and the foot pads. Generalization is sometimes observed. As pustules are fragile lesions, one may only observed yellowish crusts, erosions and ulcerations.

The diagnosis is mainly based on the observation of these lesions distributed on a symmetrical pattern, affected general condition (fever, anorexia, apathy), cytological (direct smear of a pustule) and histological examination (biopsy of one or several pustules or crusts). Cytologically, PF is characterized by acantholysis, namely the presence of living, circular, rather small keratinocyte with a dark-blue cytoplasm. It should be kept in mind that acantholysis is very characteristic for PF but is not pathognomonic. It could be observed with some infectious (Staphylococci, dermatophytes, leishmaniasis) or paraneoplastic conditions. Acantholysis induces a neutrophilic reaction with non-degenerated cells. Histological findings mirrors cytological one with intraepidermal pustules usually subcorneal. The treatemnet is based on the use of immunomdulatory drugs.

Sebaceous adenitis is an immune-mediated condition characterized by a lymphocyte-driven destruction of sebaceous glands. Pathogenesis is unclear

although autoimmunity or infections are supposed to trigger the initial reaction. Some breeds such as standard poodle, Viszla and Akitas are predisposed but the disease may be observed in all breeds.

Clinically, changes are those expected with sebaceous glands destruction: Intrafollicular hyperkeratosis (follicular casts), dry or oily seborrhea. Pruritus is often reduced during the first stages of the disease but may progressively increase, especially if secondary bacterial infections are present. General condition may be affected, especially in Akitas.

The diagnosis is based on the observation on arciform hair loss, follicular casts and moth-eaten alopecia and histological examination. The latter usually reveals the absence of sebaceous glands, mononuclear (lymphocytes, histiocytes) infiltration of the isthmus region (where the sebaceous glands should be) and the intrafollicular hyperkeratosis. The treatment consists in replacing sebaceous glands production (antiseboorheic shampoos, propylene-glycol, essential fatty acids, baby oil…) and immunomodulatory drugs such cyclosporine A.

Cutaneous T cell epitheliotropic lymphoma is a very pruritic condition affecting older dogs and mimicking atopic dermatitis in the first stages of the development of the disease. Affected animals present with diffuse to localized skin erythema, crusts and erosions. Skin and mucous membranes (depigmentation) may be simultaneously affected. In a second stage of the disease, lesions may be more nodular.

The diagnosis if usually made with histological examination of the affected skin. Lymphocytes infiltrating the epidermis and forming small islets (Pautrier microabscesses). Epidermis of the hair follicle is often affected. This condition should be differentiated from other skin lymphoma and immunochemistry is usually necessary. The prognosis is guarded and the treatment is based on the use of Lomustin.